

**Notice of Allowability**

Application No.

10/750,461

Applicant(s)

KAMEYAMA ET AL.

Examiner

Randolph Chu

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/14/2007.
2. ☒ The allowed claim(s) is/are 1-50.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

In response to applicant's amendment received on December 14, 2007, all requested changes to the claims have been entered. Claims 51-60 are canceled.

***Examiners Amendment***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiners amendment was given in a telephone interview with Dion Ferguson on February 1, 2007.

The Application has been amended as follows:

Claims 9 10, 27, 28, 29, 30, 47, 48, 49 and 50, line 1, "A recording medium" has been changed to "A computer readable medium".

Specification, paragraph [0298], "A skilled artisan would know that computer readable media are not limited to any specific type of storage device and includes any kind of device, including but not limited to: CD's, floppy disks, RAM's, ROM's, hard disks, magnetic tapes, and internet downloads, in which computer instructions can be stored and/or transmitted. Transmission of computer code through a network or through wireless transmission means is also within the scope of this invention." has been changed to "A skilled artisan would know that computer readable media are not limited

to any specific type of storage device and includes any kind of device, including but not limited to: CD's, floppy disks, RAM's, ROM's, hard disks, magnetic tapes in which computer instructions can be stored."

***Allowable Subject Matter***

Claim 1-50 are allowed.

With respect to claims 1-3, 6, 9, 10-16, 21, 22, 27-34, 35, 36, 41, 42, 47-50, non of the prior art teach or fairly suggest the limitation of "varying (increasing) the number of rectangular regions within the reference patch and the second patch in a stepwise manner, estimating the aforementioned correspondent relationships, obtaining the coordinate converted frames, and calculating the correlative values for each number of rectangular regions, thereby obtaining a plurality of correlative values corresponding to the number of rectangular regions within the reference patch and the second patch; comparing the degrees of correlation for each number of rectangular regions, based on the plurality of the correlative values; and generating a synthesized frame having a higher resolution than either of the two frames, by administering interpolation calculations on the images within the second patch and the reference patch, based on the correspondent relationships, which were estimated among the pixels of the reference patch and the second patch having the number of rectangular regions therein that yielded the highest degree of correlation", in combination with the other claim. The

prior art of Nakazawa et al. "Acquisition of High Resolution Digital Images by Interframe Integration" teaches increasing resolution of moving picture using the relationship of various interframe pixels with the block matching. However, Nakazawa et al. does not teach or fairly suggest varying (increasing) the number of rectangular regions within the reference patch and the second patch in a stepwise manner, estimating the aforementioned correspondent relationships, obtaining the coordinate converted frames, and calculating the correlative values for each number of rectangular regions, thereby obtaining a plurality of correlative values corresponding to the number of rectangular regions within the reference patch and the second patch; comparing the degrees of correlation for each number of rectangular regions, based on the plurality of the correlative values; and generating a synthesized frame having a higher resolution than either of the two frames, by administering interpolation calculations on the images within the second patch and the reference patch, based on the correspondent relationships, which were estimated among the pixels of the reference patch and the second patch having the number of rectangular regions therein that yielded the highest degree of correlation. These features are claimed in the independent claims 1-3, 6, 9, 10-16, 21, 22, 27-34, 35, 36, 41, 42, 47-50 render them allowable.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/

A handwritten signature in black ink, reading "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" being more prominent and the last name "Bella" following in a similar style.

**MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600**